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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/099,873	03/15/2002	Michael R. Wells	1684-4189US (484-15631-US)	4455

24247 7590 07/29/2003

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EXAMINER
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GAY, JENNIFER HAWKINS

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 07/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



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EXAMINER

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**Office Action Summary**

Application No.

10/099,873

Applicant(s)

WELLS ET AL.

Examiner

Jennifer H Gay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the port inlet comprising a generally pyramidal shape as recited in claims 4, 1, and 21 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. Figures 2, 3, 5, and 7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 5, 6, 19, 20, 24, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Lebourg (US 3,621,924).

*Regarding claims 1-3, 5, 6, 19, and 20:* Lebourg discloses a core bit assembly that includes the following features:

- An outer barrel (21) having one end attached to a drill string (11).
- An inner barrel (29) rotatably disposed inside the outer barrel and including an inner tube (47) and a core shoe (69) attached to one end of the tube.

- A core bit (30, see Figure 1B) attached to the outer barrel near the core shoe.

The bit includes the following features:

- A body having a face with a throat therein; the throat extends to a longitudinal cavity.
- A cutter located on the face.
- A port outlet on the face.
- A bore (59 and 68) extending through the body with one end in communication with the outlet.
- A port inlet (20) that is conical in shape with a first end having a first cross-sectional area joined to end opposite the outlet and extending to a second end having a second cross-sectional area larger than the first cross-sectional area.

*Regarding claims 24 and 26:* Lebourg discloses a method for reducing fluid flow through the above bore (59 and 68). The method involves the following steps:

- Enlarging the cross-sectional area of the port inlet relative to the cross-sectional of the bore.
- Receiving fluid through the port and into the bore.

5. Claims 13-16 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Radford (US 4,607,710).

Radford discloses a core bit assembly, and its method of use, that includes the following features:

- An outer barrel (21) having one end attached to a drill string (11).
- An inner barrel (20) rotatably disposed inside the outer barrel and including an inner tube (22) and a core shoe (24) attached to one end of the tube.
- A core bit (10, see Figure 1) attached to the outer barrel near the core shoe.

The bit includes the following features:

- A body having a face (14) and an inner, longitudinally extending, cylindrical cavity (54) with the core shoe extending into the cavity.

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- A cutter located on the face.
- A surface feature (62) disposed on a wall of the cavity. The feature imparts a resistance to fluid flow in a narrow annulus defined by the wall of the cavity and the core shoe.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4, 7-12, 17, 18, 21-23, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lebourg (US 3,621,924).

*Regarding claims 4, 7, and 21:* Lebourg does not specifically disclose that the port inlet has a pyramidal shape. However, it would have been an obvious matter of design choice to formed the port inlet of Lebourg with a pyramidal shape, since applicant has not disclosed that the pyramidal shape solves any stated problem or is for any particular purpose and it appears that the invention would equally well with either the conical shape or the pyramidal shape.

*Regarding claims 8-11, 17, 18, 22, 23, and 25:* Lebourg discloses a core bit assembly, and its method of use, that includes the following features:

- An outer barrel (21) having one end attached to a drill string (11).
- An inner barrel (29) rotatably disposed inside the outer barrel and including an inner tube (47) and a core shoe (69) attached to one end of the tube.
- A core bit (30, see Figure 1B) attached to the outer barrel near the core shoe.

The bit includes the following features:

- A body having a face with a throat therein; the throat extends to a longitudinal cavity.
- A cutter located on the face.

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- A port outlet on the face.
- A bore (59 and 68) extending through the body with one end in communication with the outlet.
- A port inlet (20) that is conical in shape with a first end in fluid communication with the bore.

Lebourg discloses all of the limitations of the above claims except for the port inlet having an approach angle between 0 and 44 degrees. However, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the port inlet of Lebourg with an approach angle between 0 and 44 degrees, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

*Regarding claim 12:* Lebourg discloses a core bit assembly that includes the following features:

- An outer barrel (21) having one end attached to a drill string (11).
- An inner barrel (29) rotatably disposed inside the outer barrel and including an inner tube (47) and a core shoe (69) attached to one end of the tube.
- A core bit (30, see Figure 1B) attached to the outer barrel near the core shoe.

The bit includes the following features:

- A body having a face with a throat therein; the throat extends to a longitudinal cavity.
- A cutter located on the face.
- A port outlet on the face.
- A bore (59 and 68) extending through the body with one end in communication with the outlet.
- A port inlet (20) that opens into the longitudinal cavity defining an annular reservoir with a first volume between the inside wall of the cavity and the outside wall of the core shoe.

Lebourg discloses all of the limitations of the above claims except for an inside wall portion of enlarged diameter with the core shoe providing an annular reservoir having a second

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volume up to 70% larger than the first volume. However, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the assembly of Lebourg with an inside wall portion of enlarged diameter with the core shoe providing an annular reservoir having a second volume up to 70% larger than the first volume, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

### **Conclusion**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The remaining references made of record disclose various core bits.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (703) 308-2881. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7687 for regular communications and (703) 305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.



David Bagnell  
Supervisory Patent Examiner  
Art Unit 3672

JHG   
July 14, 2003